

Description	No. of River crossing	Total amount
<p>Part-A: Construction of 'UR+6' EHT Tower for 8 Nos. River crossing (For Max. Span Length 251 Mtr. to 400 Mtr. and 2 nos. Tower for each crossing)</p> <p>(Bidder is required to carry out the site visit and soil investigation for finalizing the civil foundation requirement for the Tower. The design calculation is required to submit to TPCODL for verification and approval before start of the work.)</p>	8	
<p>Part-B: Construction of 'PC+6' EHT Tower for 2 Nos. River crossing (For Max. Span Length 101 Mtr. to 250 Mtr. and 2 nos. Tower for each crossing)</p> <p>(Bidder is required to carry out the site visit and soil investigation for finalizing the civil foundation requirement for the Tower. The design calculation is required to submit to TPCODL for verification and approval before start of the work.)</p>	2	
<p>Part-B: Installation of DP with Isolator using 14 Mtr. H-Pole (4 Nos. per River Crossing)</p>	40	
<p>PART C: Dismantling portion (For 10 Nos. River Crossing Locations)</p>	10	
	Total in Cr.	

Note: The type of Tower selection may vary depending on site conditions and the length of the river crossing.

Part-A: Construction of 'UR+6' EHT Tower for 8 Nos. River crossing (For Max. Span Length 251 Mtr. to 400 Mtr. and 2 nos. Tower for each crossing) (Bidder is required to carry out the site visit and soil investigation for finalizing the civil foundation requirement for the Tower. The design calculation is required to submit to TPCOODL for verification and approval before start of the work.)									
No. of River crossing		Supply of Material for Construction of 'UR+6' EHT Tower							
Sl.No.	Description	Unit	Per River Crossing Qty.	No. of River Crossing	Total Quantity	Unit rate	GST	All Incl rate	Total Amount
					A	B	C	D=B+C	E=D*A
1	Cost of GJ UR +6 TYPE Tower super structure (Main + Extension +Sub + Tensioning)								
i	UR Tower (3.585 TON per Tower)	TON	27.17	8	217.36				
ii	V/S Mtr Extension (4.249 TON per Tower)	TON	8.50	8	67.88				
iii	Sub & Cleat (0.610 TON per Tower)	TON	1.22	8	9.76				
iv	Tensioning (1.509 TON per Tower)	TON	3.02	8	24.14				
2	Net Bolts								
i	UR Tower (2.283 TON per Tower)	kg	4566.00	8	36528.00				
ii	6 Mtr Extension (0.588 TON per Tower)	kg	1176.00	8	9408.00				
3	Conductor and Accessories								
i	232 Sp. mm Conductor (AALC)	M	2472.00	8	19776.000				
ii	Earth wire 71.5, 400 meter + Tower earthing (50 x 4) - 600 Mtr.	M	600	8	4800.000				
iii	Double tension Hardware Fittings	EA	24	8	192.000				
iv	Disc insulator (BAS)120 KV polymer	EA	48	8	384.000				
v	Earth wire tension fitting	EA	4	8	32.000				
vi	Vibration damper for earth wire	EA	4	8	32.000				
vii	Vibration damper for conductor	EA	24	8	192.000				
viii	Copper flexible bond	EA	2	8	16.000				
ix	Phase Plate (R V B)	Set	12	8	96.000				
x	Tower Number Plate	EA	2	8	16.000				
xi	Circuit Plate	EA	4	8	32.000				
xii	40 mm Dia. 3Mtr. long G.I Earthing device	EA	4	8	32.000				
xiii	Flat/GI 50 x 6 mm	kg	200	8	1600.000				
xiv	Danger Board (GB)	EA	4	8	32.000				
xv	POLYCARBONATE BIRD GUARD	EA	48	8	384.000				
xvi	Anticlimbing Device	kg	211.2	8	1689.600				
xvii	Loop Connector	EA	12	8	96.000				
4	Additional Items if any required as per site condition								
i	ACER 270 - Non-Metallic Solid Carbon Composite Core Type HTLS Conductor (20.5mm Dia)	km	0.3	8	2.400				
ii	SINGLE TENSION STRING FOR HTLS CONDUCTOR	Nos	12	8	96.000				
iii	SINGLE SUSPENSION STRING FOR HTLS CONDUCTOR (If applicable)	Nos	12	8	96.000				
iv	VIBRATION DAMPER HTLS (If applicable)	Nos	12	8	96.000				
v	MISC./ FOR HTLS	Nos	6	8	48.000				
vi	Twin Tie suitable for HTLS Conductor	Nos	12	8	96.000				
A					Total Cost of materials				
Civil and Services Works									
Sl.No.	Description	Unit	Per River Crossing Qty.	No. of River Crossing	Total Quantity				Amount
Erection of UR+6 Tower									
1	Construction Earthing chamber including installation of earthing pipe Making earthing chamber including excavation, soil treatment with bentonite powder, calculation of earth resistance, including installation of 3Mtr GI Pipe 40mm50mm including welding of Flat/GI angles	EA	4	8	32.000				
2	Erection of UR+6 Tower	TON	46.648	8	365.184				
3	232 Sp. mm Conductor (AALC)	KM	2.472	8	19.776				
4	Earth wire 71.5, 400 meter + Tower earthing (50 x 4) - 600 Mtr.	KM	0.600	8	4.800				
5	Double tension Hardware Fittings	EA	24.000	8	192.000				
6	Disc insulator (BAS)120 KV polymer	EA	48.000	8	384.000				
7	Earth wire tension fitting	EA	4.000	8	32.000				
8	Vibration damper for earth wire	EA	4.000	8	32.000				
9	Vibration damper for conductor	EA	24.000	8	192.000				
10	Copper flexible bond	EA	2.000	8	16.000				
11	Phase Plate (R V B)	Set	12.000	8	96.000				
12	Tower Number Plate	EA	2.000	8	16.000				
13	Circuit Plate	EA	4.000	8	32.000				
14	Earthing Conductor: 50X6 mm (2.45G-Mtr)	KG	200.000	8	1600.000				
15	Danger Board (GB)	EA	4.000	8	32.000				
16	POLYCARBONATE BIRD GUARD	EA	48.000	8	384.000				
17	Anticlimbing Device	kg	211.200	8	1689.600				
18	Loop Connector	EA	12.000	8	96.000				
4	Additional Items if any required as per site condition								
i	ACER 270 - Non-Metallic Solid Carbon Composite Core Type HTLS Conductor (20.5mm Dia)	km	0.300	8	2.400				
ii	SINGLE TENSION STRING FOR HTLS CONDUCTOR	Nos	12.000	8	96.000				
iii	SINGLE SUSPENSION STRING FOR HTLS CONDUCTOR (If applicable)	Nos	12.000	8	96.000				
iv	VIBRATION DAMPER HTLS (If applicable)	Nos	12.000	8	96.000				
v	MISC./ FOR HTLS	Nos	6.000	8	48.000				
vi	Twin Tie suitable for HTLS Conductor	Nos	12.000	8	96.000				
Civil Works									
Topo-Graphical Survey									
1	Dense Survey of lines profile plotting, spotting and marking, as per technical specification and scales of work.	EA	2	8	16.000				
Geo-Technical Investigation									
2	Soil Investigation, Design and Engineering Including Report submission and approval.	EA	2	8	16.000				
Earth work - Excavation									
3	Earth work in excavation in all types of soil by mechanical (Hydraulic excavator) (manual means including developing drawing of rate and naming of bottom, including vegetation removal, getting out the excavated soil upto a lead of 50 m as per direction of Engineer-in-charge.	CUM	500	8	4000.000				
Filling Available Earth									
4	Filling available earth (excluding rock) in all types of work in layers not exceeding 30 cm in depth: consolidating each deposited layer by ramming watering as per direction of Engineer-in-charge	CUM	500	8	4000.000				
Supplying and Levelling Good Earth									
5	Supplying and Levelling Good Earth at site in layers not exceeding 30 cm in depth: consolidating each deposited layer by ramming watering, as per direction of Engineer-in-charge	CUM	100	8	800.000				
1200 mm dia Piles									
6	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under neamed piles of specified diameter and length below pile cap in M-30 cement concrete/cost of concrete included, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap)	M	600	8	4800.000				
800 mm dia Piles									
7	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under neamed piles of specified diameter and length below pile cap in M-30 cement concrete/cost of concrete included, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap)	M	10	8	80.000				
600 mm dia Piles									
8	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under neamed piles of specified diameter and length below pile cap in M-30 cement concrete/cost of concrete included, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap)	M	10	8	80.000				
450 mm dia Piles									
9	Boring with hydraulic piling rigs with power units, providing and installing cast in situ single under neamed piles of specified diameter and length below pile cap in M-30 cement concrete/cost of concrete included, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap)	M	10	8	80.000				
Demolishing/Dismantling CCR/CC/Brick Masonry									
10	Demolishing RCC/concrete/brick Masonry manually or by mechanical means including disposal of material within 50 metres lead as per direction of Engineer-in-charge. Demolishing stone rubble masonry manually/ RCC/BRICK WORK/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar.	CUM	50	8	400.000				
PCC of Grade M15 (1:2:4)									
11	Supplying, Providing and laying in position PCC of M15 Grade in ratio 1:2:4 (1 cement: 2 coarse sand (zone-II) : 4 graded stone aggregate 20 mm nominal size) grade at all levels including cost of all materials, labour, formwork, scaffolding, shoring, Curing and shuttering etc. as directed by EIC.	CUM	15	8	120.000				
RCC of M25 Grade (1:1:2)									
12	Supplying, Providing and laying in position RCC of M25 in ratio 1:1:2 (1 cement: 1 coarse sand (zone-II) : 3graded stone aggregate 20 mm nominal size) grade for super-structure or substructure at all levels including cost of all materials, labour, formwork, scaffolding, shoring, Curing and shuttering providing necessary adstructure but excluding the cost of reinforcement,inserts etc. as directed by EIC.	CUM	100	8	800.000				
RCC of M30 Grade									
13	Supplying, Providing and laying in position RCC of M30 grade with 20mm downgraded coarse aggregates for super-structure or substructure at all levels including cost of all materials, labour, formwork, scaffolding, shoring, Curing and shuttering providing necessary adstructure but excluding the cost of reinforcement,inserts etc. as directed by EIC.	CUM	10	8	80.000				
Steel reinforcement for R.C.C									
14	Steel reinforcement for R.C.C. work including Shifting, straightening, cutting, bending, placing in position and binding all complete including supply of binding wire. Cold twisted bars/ Thermo-Mechanically Treated bars of approved make as directed by EIC and as per approved design.	TON	40	8	320.000				
Supply and installation of MS liner									
15	Supply and installation of MS liner of 6mm thickness including Loading/Unloading/Transportation/Fabrication and installation as per approved drawing and as per instruction of engineer in charge.	TON	72	8	576.000				
Shoring									
16	Shoring using timber material at all depth required in wet or special locations with supply of all materials including labour cost	M2	300	8	2400.000				
B					Total Cost of Civil & Services				
F					Total				

Part-B: Construction of 'PC+R' EHT Tower for 2 Nos. River crossing (For Max. Span Length 101 Mtr. to 250 Mtr. and 2 nos. Tower for each crossing)										
(Bidder is required to carry out the site visit and soil investigation for finalizing the civil foundation requirement for the Tower. The design calculation is required to submit to TPCOODL for verification and approval before start of the work.)										
No. of River crossing		Supply of Material for Construction of 'PC+R' EHT Tower					2			
Sl.No.	Description	Unit	Per River Crossing Qty.	No of River Crossing	Total Quantity	Unit rate	GST	All Incl rate	Total Amount	

Part-B: Installation of DP with Isolator using 14 Mtr. H-Pole
(4 Nos. per River Crossing)

No. of 33 KV DP required With Isolator					40				
MATERIALS FOR 33 KV DP With Isolator									
Sl. No.	Description of Materials	Unit	Quantity for 1 No's DP with Isolator	No. of DP Requirement	Total Quantity	Unit rate	GST	All incl rate	Total Amount
					A	B	C	D=B+C	E=D*A
1	14 Mtr. Long H-Pole(GI)	EA	2	40	80				-
2	Top Channel(GI) 100X50X6mm, 9.56 KG/Mtr., each Channel(GI) length 4.3 mtr., 2 no's Channel(GI) required =(2x9.56x4.3)	KG	82.22	40	3288.64				-
3	Fish Plate(GI) 50x6 mm., 2.36 kg/Mtr., each 0.280 mtr. length, 6 no's required = (6x2.36x0.280)	KG	3.96	40	158.592				-
4	Insulator Support Channel(GI) 75X40X 4.8mm., 7.14KG/Mtr., each Channel(GI) length 4.3 Mtr., 1 no's Channel(GI) required =(1x7.14x4.3)	KG	30.70	40	1228.08				-
5	Isolator Support Channel(GI) 75X40X 4.8mm., 7.14KG/Mtr., each Channel(GI) length 4.3 Mtr., 2 no's Channel(GI) required =(2x7.14x4.3)	KG	61.40	40	2456.16				-
6	Double Pole Belting Channel(GI) 75X40X 4.8mm., 7.14KG/Mtr., each Channel(GI) length 4.3 Mtr., 4 no's Channel(GI) required =(4x7.14x4.3)	KG	122.81	40	4912.32				-
7	50x50x6mm.GI Bracing Angle(GI), 4.5Kg./mtr., each Angle(GI) length 4.927 mtr., 4 nos Angle(GI) required =(4*4.5*4.927)	KG	88.69	40	3547.44				-
8	Isolator Operating Down Pipe Support Channel(GI) 75X40X 4.8mm., 7.14KG/Mtr., each Channel(GI) length 0.8 Mtr., 1 no's Channel(GI) required =(1x7.14x0.8)	KG	5.71	40	228.48				-
9	Down Pipe Diagonal Support Angle(GI), 4.5Kg./mtr., each Angle(GI) length 0.388mtr., 1 nos Angle(GI) required =(1*4.5*0.388)	KG	1.75	40	69.84				-
10	Down Pipe Base Support Angle(GI), 4.5Kg./mtr., each Angle(GI) length 0.34mtr., 1 nos Angle(GI) required =(1*4.5*0.340)	KG	1.53	40	61.2				-
11	Isolator Support Side Channel(GI) 100X50X6mm, 9.56 KG/Mtr., each Channel(GI) length 0.5 mtr., 2 no's Channel(GI) required =(2x9.56x0.5)	KG	9.56	40	382.4				-
12	Danger Plate, 2 no's.	EA	2	40	80				-
13	Back Clamp for danger Plate 25X3 mm. Flat(GI), 0.59Kg/Mtr. Flat(GI) of 0.510mtr length 2 no's =(2x0.59x0.510)	KG	0.60	40	24.072				-
14	H.T. Stay clamp, 50x8 mm. Flat(GI), 3.14Kg/Mtr., 0.511 Mtr. Length, 2 no's qty. required (1 Pair)	EA	2	40	80				-
15	H.T. Stay set (Complete)	SET	2	40	80				-
16	H.T. Stay Insulator Type-C (2 No's.)	EA	4	40	160				-
17	7/8 SWG Stay Wire 15kg /stay	KG	30	40	1200				-
18	GI Pipe Earthing 40mm, 3 Mtr. Long	EA	2	40	80				-
19	50x6mm Flat(GI) for earthing, 2.36kg/mtr., (15 Mtr. For L.A, 4 Mtr for Isolator Body, 2.5 mtr. For mesh formation and 2.5 mtr. For raising)= 24x2.36	KG	56.64	40	2265.6				-
20	GI barbed wire antilimbing device 3 Kg. Per support	KG	6	40	240				-
21	Back Clamp for antilimbing device 25X3 mm. Flat(GI), 0.59Kg/Mtr. Flat(GI) of 0.510mtr length 8 no's =(8x0.59x0.510)	KG	2.41	40	96.288				-
22	Lightning Arrester(30KV,10KA) (Station Class class-2)	EA	3	40	120				-
23	33 KV 1250 AMP Double break (Turn & twist center rotating) isolator without earth switch with PI(Polymer)	EA	1	40	40				-
24	33KV pin insulator polymer	EA	3	40	120				-
25	H.W fitting(B&S) 90KN.4 Bolt	EA	6	40	240				-
26	Disc insulator (B&S) 90 KN polymer	EA	6	40	240				-
27	Wedge connector for 232 sq.mm AAA conductor	EA	6	40	240				-
28	Paddle clamp for wedge connector of 232 sq.mm AAA conductor	EA	6	40	240				-
29	GI Nut, Bolt & Washer of different sizes (22.15 Kg each DP with Isolator)	KG	22.15	40	886				-
30	Black Paint(GIS Numbering & Zebra Stripping)	L	1	40	40				-
31	Yellow Colour Paint(GIS Numbering & Zebra Stripping) for Background	L	2	40	80				-
A	Total Cost of materials								-
Civil & Services									
Sl. No.	Description of Materials	Unit	Quantity for 1 No's DP with Isolator	No. of DP Requirement	Total Quantity	Unit rate	GST	All incl rate	Total Amount
1	Installation/Erection of 14 Mtr.H Pole including loading and unloading, transportation from site/tent upto 3 Kms., excavation,work ad civil work. The scope also includes providing of all civil material for concreting and coupling. Transportation, loading and unloading of Pole from Nearest division/store/site office to site(maximum upto 3KM). Excavation for grouting, including concreting and coupling and earthing as per TPCODL standards and drawings. The Scope of work include providing & laying of laying of 1:1.5:3, M20 Grade cement concrete concrete of size - 600(B)x600(W)x2300(H) , and cooping of 600(B)x600(W)x450(H).Scope of work also includes 5 days curing and zebra painting (In Black & Yellow Strips/Zebra) .As per drawing.	No.	2	40	80				-
2	BA has to do the installation,welding & fabrication work of different size GI Channel(100x50x6mm, 75x75x6mm, 50x50x6mm,75x40x4.6mm etc) as per size requirement	Kg	408.33	40	16333.152				-
3	Installation of HT Danger Board as per TPCODL specification	No.	2	40	80.000				-
4	Fixing of complete 33KV line. Complete stay set includes 1) Turn Buckle Assembly 2) Stay Rod & Stay plate 3) Stay Insulator 4) Stay Wire. 5)Stay clamps with Nuts & bolts. BA will do the excvation including excvation, supply of 0.5Cum cement concrete foundation 1:2:4 size (500mmx500mmx800mm) using 20mm BHG metal with all labour and material as per TPCODL Drawing & Standard.Note:- Excavation of earth will be done of size 500X500X1500 mm.	No.	2	40	80.000				-
5	Bidder has to provide necessary civil material for construction of Earthing chamber, excavation & installation of including earthingpipe dia up to 100mm dia for length of 3Mtr.Scope also includes necessary nutbolt, 25 Kg Bentonide Power , connection & welding with incoming earth flat. The work to be executed as per TPCODL drawing & design	EA	2	40	80.000				-
6	BA will lay Earthing Conductor: 50X6 mm (2.4Kg./Mtr.) or 40x6 GI Flat for Raiser from the burial earth mat to equipment, structure etc)	km	0.024	40	0.944				-
7	Installation of Barbed Wire (to avoid the climbing at pole) for 9Mtr/11Mtr/13 Meter pole/H Pole as per TPCODL specification and drawing.	Set	2	40	80.000				-
	Installation of 3phase ,30 KV 10KA Lighting arrester along with earthing connection, Fixing of all Three arrester on Ms channel	No.	3	40	120.000				-
	Installation, testing & commissioning of 33KV, 3 Ph gang operated , Manual Operated, Disconnector (Isolator) with solid core pos insulator.-Without earth switch with gear box arrangement and other accessories including jumpering & earthing connection if any ..	SET	1	40	40.000				-
8	Installation of 33KV Polymer Pin Insulator 10KN along with Nutbolts for 33KV line.Nutbolts will be paid separately..	No.	3	40	120.000				-
9	Installation of 33KV Polymer Disc Insulator (90KN- 120KN) along with Hardware fitting for 33KV line.Nutbolts will be paid separately..	No.	6	40	240.000				-
10	Installation of All type of Connector PG Clamp, T Clamp , connector, palm connector,Miniwedge connector,Wedge connector and other types of connector.	No.	12	40	480.000				-
11	S & I of Bird Guard	EA	9	40	360.000				-
12	Supply & installation of different size of GI Nut ,bolt, spring & washers etc	kG	22.15	40	886.000				-
B	Total Civil & Services								-
C	Sub Total (A+B))								-
F	Gross Total Material +Services (C+D+E) for DP With Isolator								
Transportation									
Sl. No.	Description of Materials	Unit	Quantity for 1 KM Line	No. of Trip	Total Trip	Unit rate	GST	All incl rate	Total Amount
1	Transportation of various items from TPCODL store/site to other site or vice versa in TPCODL operational area - Trailer with labours as required (price per trip). Scope of work also include loading and unloading of materials heavy items like, 14 mt Rail Pole, PCC Pole, HT Panel, Transformer, Cable Drum, LT Board . Item whose loading& unloading is to be done with crane , charges for crane will be paid separately. (Full Trailer)	EA	1	4	4.00				-

PART C: Dismantling portion (For 10 Nos. River Crossing Locations)							
SL.No		Unit	Quantity	Rate	GST	All incl rate	Amount
1	Dismantling of 11/13 Mtr. Joist/WPB Pole- 150X150 mm/ 160X160 mm	EA	40				-
2	Dismantling / Removal of MS Channel. from Double Pole Structure /pole	KG	8000				-
3	Dismantling of ACSR/AAAC 80/100 mm2 from overhead line	M	6000				-

A	Sub Total (Civil Portion) (in Rs.)			-
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